# Montana Department of Fish, Wildlife & Parks Project No. 7116422

# Traveler's Rest State Park Parking Improvements

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# **Technical Specifications**

This Project shall be constructed in conformance with Montana Public Works Standard Specifications, 6<sup>h</sup> Edition, except as modified by the technical specifications listed above.

# MEASUREMENT AND PAYMENT BID ITEMS

The following descriptions have been included only to provide a limited overview of each bid item and to clarify bid items to prospective bidders. The following descriptions are not intended to be all-inclusive, and shall not supersede the plans, specifications or documents included by reference as part of the contract documents. All items of work will require the selected contractor to provide all materials, labor, tools and other incidentals required to complete the work whether explicitly stated in the bid item description or not.

Mobilization/Demobilization (LS): This bid item includes, but is not limited to, all costs associated with mobilization and demobilization of equipment, personnel, and materials to and from the project site for completion of the construction. Twenty five (25%) of the lump sum will be paid after mobilization onto the site and construction has begun, fifty (50%) will be paid when 25% of the contract amount has been completed, and seventy five (75%) will be paid when 50% of the contract amount has been completed and one hundred (100%) will be paid when 75% of the contract amount has been completed.

Storm Water Pollution Prevention Plan (SWPPP) (LS): This bid item includes, but is not limited to, all costs associated with providing the materials, labor, tools, fees/permits, or incidentals required to permit, install, maintain, and remove all erosion control measures as required by the approved Storm Water Discharge Permit. It shall be the contractor's responsibility to procure and implement a Storm Water Discharge Permit in compliance with the Montana Department of Environmental Quality including preparation of a SWPPP, Notice of Intent (NOI) and Notice of Termination (NOT). Replacement and maintenance of any portion of the approved storm water discharge permit facilities is considered incidental. The contractor will be responsible for removing all items of the temporary facilities once vegetation has been reestablished. 25% of the amount bid for erosion/sediment control when the Contractor has moved on-site and implemented the appropriate infrastructure. 50% of the amount bid for erosion/sediment control when 50% of the contract amount bid for erosion/sediment control when 50% of the contract amount has been completed. 100% of the amount bid for erosion/sediment control when 75% of the contract amount has been completed.

<u>Traffic Control (LS):</u> All traffic control costs shall be included in the bid item "Traffic Control" Traffic Control refers to providing safe and alternative routes to all types of traffic, including vehicles, bicyclists and pedestrians by whatever means necessary to allow for continued flow of traffic. The means at which this is accomplished includes the items but are not limited to: Traffic Control Plans, Construction Identification Signs, Portable Changeable Message Board, Operations of Changeable Message Board, Traffic Control Supervisor, Construction Signs, Flaggers and Spotters and other Traffic Control Labor. This bid item is set up as lump sum and

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will pay out proportionally to percentage of contract work completed in which traffic control services are rendered. See Montana Public Works Specifications Section 01570, MDOT requirements, MUTCD and Special Provisions.

Site Clearing and Demolition (LS): This work shall consist of removing and disposing of all objectionable materials from the limits of construction including but not limited trees, shrubs, fences, stumps, downfall, roots, culverts, sidewalks, curb, and any objects manmade or natural which will adversely affect the end product. Objectionable materials must be disposed of off-site. The cost to remove and salvage, to the Owner, all existing signs that will no longer be of service after the project has been completed. In areas where the existing gravel roadway is to be restored to native materials the gravel is to be removed and stockpiled, on site, for use under the trail and as asphalt edge backing. Site Preparation shall be performed in advance of grading operations. This item will be paid for on a lump sum basis and includes all costs associated with providing the labor, tools, materials or incidentals to perform the work including dump fees if applicable.

Excavation/Embankment (CY)-This bid item includes, but is not limited to, all costs associated with providing the labor, tools, or incidentals required to excavate, haul, place and compact structural embankment to the lines and grades indicated on the plans. All material placed must be placed at 95% compaction. This bid item is paid at the plan quantity of embankment required to construct the project to the lines and grades indicated on the plans and is based on a neat line quantity with no consideration given to shrink/swell factors. Excess excavation not suitable for structural embankment, or needed for structural embankment, may be disposed of on-site by flattening fill slopes or in other areas approved by the Engineer. Intermediate pay quantities will be established by utilization of percentage complete and comparison to the design grades. Final pay quantity will be the bid quantity. The bid item is paid for on a cubic yard basis. See Montana Public Works Specifications Section 02230.

<u>Subexcavation Replacement Below Subgrade (CY):</u> This bid item includes the removal of unstable natural ground below subgrade before building any embankment over it. The unstable material may include, but is not limited to, peat, muck, swampland, buried logs and stumps, or other material not fir for an embankment base. The contractor shall excavate such materials to the boundaries as set forth by the Engineer. This pay item includes all costs associated with excavating below the sub grade and is paid per cubic yard. See Montana Public Works Specifications Section 02230.

<u>Prep Gravel Roadway for Asphalt (LS):</u> This work shall include preparing the existing gravel roadway to remove any potholes, bumps, uneven areas, etc. to prepare the roadway for asphalt concrete pavement. This bid item also includes the work to compact the existing roadway to 95% in areas where compaction is needed. If needed the contractor can apply 1" of crushed base course to help level the roadway if needed. The pay item is lump sum and includes materials, labor, equipment costs, tools and any other costs associated with preparing the roadway for asphalt. Crushed base course is not paid under the lump sum and will be paid per cubic yard.

<u>Top Soil Stripping, Stockpile and Replacement (LS):</u> This work shall consist of removing topsoil under areas of proposed asphalt, sidewalks and curbs. The topsoil shall be stockpiled somewhere

on site, as to be located by the Owner. Replacement shall include the work to reinstate topsoil into planters and disturbed areas as shown on the plans or as directed by the Engineer. This item will be paid for on a lump sum basis and includes all costs associated with providing the labor, tools, materials, operations costs or incidentals to perform the work.

<u>Crushed Base Course (CY)</u>: Unit price per cubic yard is full compensation for base gravel as specified, complete in place to 95% compaction of Modified Dry Density, for furnishing, loading, hauling, spreading, blending, shaping, watering, and compacting the crushed base course material to the thickness shown on the Drawings, and for all tools, labor and incidentals necessary to complete this item. This bid item is paid for on a cubic yard basis. Intermediate pay quantities will be established by utilization of percentage complete and comparison to the design grades and quantities by station. Final pay quantity will be amount placed not to exceed the bid quantity, unless modified by Change Order. See Montana Public Works Specifications Section 02234.

<u>3" Minus Crushed Sub-Base Course (CY)</u>: Unit price per cubic yard is full compensation for sub-base as specified, complete in place to 95% compaction of Modified Dry Density, for furnishing, loading, hauling, spreading, blending, shaping, watering, and compacting the crushed base course material to the thickness shown on the Drawings, and for all tools, labor and incidentals necessary to complete this item. This bid item is paid for on a cubic yard basis. Intermediate pay quantities will be established by utilization of percentage complete and comparison to the design grades and quantities by station. Final pay quantity will be amount paid not to exceed the bid quantity, unless modified by Change Order. See Montana Public Works Specifications Section 02234.

Stormwater Inlet/Sump (EA) This bid item includes but is not limited to, all costs associated with providing the materials, labor, tools and incidentals required to install concrete strormwater inlets/sumps with lids as specified in the drawings. Included is the concrete ring, grate and forming concrete curb to make the transition to the grate profile. Payment will be made on each catch basin installed. See Montana Public Works Standard Specifications Section 02720.

HMA Type B PG 64-22 - Roadway/Trail (SY): Unit price per square yard is full compensation for the specified type and thickness of hot plant mix asphalt concrete pavement, complete in place, for producing, furnishing, transporting, placing, shaping, compacting and finishing of the paving mix, for improving unsatisfactory areas, furnishing samples and for all materials, manipulation, tools, labor, equipment and incidentals necessary to complete this item. Final pay quantity will be the final square yardage of asphalt placed, not exceeding bid amount unless modified by Change Order. Measurement shall be to the neat line, accepted, in place area as determined by the Engineer.

<u>Cement Concrete Curb (LF):</u> This bid item includes, but is not limited to, all costs associated with providing the excavation, sub grade prep, placement of base materials, labor, tools, or incidentals required to place the curb as detailed on the plans. Base gravels are included in this pay item. The bid item will be paid for on a linear foot basis of curb and gutter installed and will include the cost to install curb turn fillets and aprons. See Montana Public Works Specifications

Section 02528.

Concrete Walk – 4" thickness (SF): This bid item includes, but is not limited to, all costs associated with providing the materials, labor, tools, or incidentals required to place 4" of ¾" minus crushed base course, compact, fine grade, and then install a 4" thick concrete sidewalk as indicated on the plans for construction. Excavation, embankment, rough grading, crushed base course, and surface restoration shall be incidental to this bid item. The bid item will be paid for on a square foot basis of sidewalk installed. See Montana Public Works Specifications Section 02529.

<u>Detectable Warning Surface (EA)</u> –This bid item includes, but is not limited to all costs associated with providing the materials, labor, tools, or incidentals required to place a handicap ramp with a replaceable truncated dome section (CASTinTACT or equal) as indicated on the plans for construction. The handicap ramps and truncated dome areas shall comply with Missoula County standard details and ADA guidelines. Each handicap ramp shall have truncated dome panels placed within the handicap ramp, please see the contract plans. The bid item will be paid for on an each basis. See Montana Public Works Specifications Section 02529.

<u>Painted Crosswalk Line (SF):</u> This work consists of furnishing and installing pavement markings upon the roadway surface in accordance with the Plans, FHWA publication Standard Alphabet for Highway Signs and Pavement Markings and Montana Department of Transportation Standard Specifications for Road and Bridge Construction Section 620. Payment will be by square foot.

<u>Paint Line – 4 in (LF):</u> This work consists of furnishing and installing pavement markings upon the roadway surface in accordance with the Plans, FHWA publication Standard Alphabet for Highway Signs and Pavement Markings and Montana Department of Transportation Standard Specifications for Road and Bridge Construction Section 620. Payment will be by linear foot.

<u>Painted Handicap Symbol (EA):</u> This work consists of furnishing and installing handicapped parking symbol pavement markings in compliance with current ADA Standards upon the roadway surface in accordance with the Plans, FHWA publication Standard Alphabet for Highway Signs and Pavement Markings and Montana Department of Transportation Standard Specifications for Road and Bridge Construction Section 620. Payment will be by linear foot.

<u>Seeding/Restoration (SY)</u>: This work consists of ground surface preparation including scarification and applying 3" of top soil, furnishing and applying fertilizer; furnishing and placing seed in areas as indicated on the Plans, by means of broadcast spreading and initial watering after seed has been spread. This item includes but not limited to, tools, materials, labor and equipment costs. Payment is per square yard. See Montana Public Works Standard Spec section 02910.

<u>Lighting System (LS):</u> Lump Sum price is full compensation for furnishing and installation of all electrical system components, including all permitting, meters, wiring, conduits, light pole foundations, light poles and components, excavation, backfill and finish grading, as indicated on

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the Plans. The Contractor will coordinate with the Engineer and local utility as needed. The Lump Sum price includes all materials, equipment, tools, labor and incidentals necessary to complete this item.

<u>Signing (LS)</u>: This work consists of furnishing and placement and/or removal and reset of signs and sign posts at designated areas on the project drawings or as directed by the Engineer. This work also consists of the mounting and complete installation of FWP supplied signing at designated areas on the project drawings or as directed by the Engineer. Payment will be paid on a lump sum basis.

### SPECIAL PROVISIONS

# INTRODUCTION TO THE SPECIAL PROVISIONS

The work on this project shall be accomplished in accordance with the Montana Public Work Standard Specifications (MPWSS), sixth edition, as issued by the Montana Contractors' Association. The standards specifications, as modified or supplemented by the Amendments to the Standard Specifications and these special provisions, all of which are made part of the Contract Documents, shall govern all of the Work.

1. <u>PRE-BID INFORMATION</u>: Prior to bidding, all questions concerning this project shall be directed to:

Colton Litzenberger, Project Engineer Professional Consultants, Inc. 3115 S Russell Street Missoula, MT 59801 ph. (406) 728-1880 fax: (406) 728-0276 Email:coltonl@pcimontana.com

2. <u>PRE-CONSTRUCTION CONFERENCE</u>: After the Notice of Award has been issued and prior to the Notice to Proceed, the Project Engineer and representatives of the Owner will meet with the Contractor to discuss the work in general, including administrative matters, accident prevention, and safety; to answer any questions of the Engineer or Contractor; and to resolve any potential problems before the work commences.

10 days prior to the Pre-construction Conference, the Contractor shall file with the Engineer all materials and shop submittals and a Construction Schedule and Plan of Construction with proposed detailed methods of carrying out the work addressing the following items of work:

- A. Site Preparation
- B. Clearing and Excavation and Grading
- C. Base Gravel
- D. Electrical Installation
- E. Curb Sidewalk Installation
- F. Asphalt Paving
- G. Finish Grading and Topsoil/Seed
- 3. PARK CLOSURE: The Park is to remain open during construction activities. The contractor is to provide a safe route for pedestrian and visitor traffic into and out of the park. When construction is taking place on the Access Road, the park entrance may be closed during construction hours, but must be reopened during non-construction hours. The Contractor must keep the Project Engineer informed of his construction activities. The Contractor must notify the Project Engineer 7 calendar days prior to when the

Contractor wishes to begin construction on the Access Road.

- 4. <u>SEQUENCE OF WORK</u>: The Contractor will be required to accomplish the work items according to the schedule of construction as submitted to the Engineer following the award of the contract.
- 5. <u>COORDINATION WITH ENGINEER</u>: The Contractor is required to coordinate contract issues with the Engineer whose address is in Item 1. The Owner may have other personnel on site during the contract duration and they may coordinate site operational issues with the Contractor. The authority to provide direction, approvals, contract modifications, payments and other duties defined in the contract reside solely with the Engineer.
- 6. PROJECT MEETINGS: Representatives of the Contractor will be required to meet once a week with the Project Engineer at a mutually agreed upon time to discuss the next week's work, past, present and future problems, scheduling, and questions relating to plans and specifications. Representatives of Montana Fish Wildlife & Parks will be invited to attend these meetings. The Contractor, along with the Project Engineer will agree on a day of the week and a time (to meet each week) at the pre-construction meeting and this time and day will not change throughout the project duration.
- 7. <u>UTILITIES</u>: Any utilities required by the Contractor for the prosecution of the work shall be paid for by said Contractor. Any utility locations shown on the Drawings are approximate, and shall be confirmed by the Contractor prior to any required excavation. The Contractor shall be responsible for repairing or replacing all water, sewer, power, telephone, TV, gas, and irrigation lines damaged by his activities. For locations, all utilities must be contacted at 1-800-424-5555, 48 hours prior to commencement of construction.
- 8. <u>MATERIALS TESTING REQUIREMENTS</u>: Provide a quality control testing program as required of Section 01400, MPWSS, AASHTO T238 (ASTM D2922) and AASHTO T329 (ASTM D3017), nuclear densomoter methods.

Provide all required Proctors, gradations, and asphalt mix designs for all imported materials to be used in the work. All materials test submittals shall be the responsibility of the Contractor at no cost to the Engineer or the Owner. Material submittals must be approved at least 2 weeks prior to incorporation of materials into the work. As part of his Quality Control testing, the Contractor shall contract with an independent, certified materials testing laboratory to provide materials testing at least to the following frequency:

- a. Sub-grade, native and cut and fill areas shall be thoroughly compacted.
- b. Base gravels and existing gravel roadway under all areas which are to be traveled surfaces shall be tested for in-place field density at the following schedule:
- Pedestrian Trail minimum intervals of 200 feet along the entire length
- Access Road minimum intervals of 200 feet along the entire length

- East Loop tests every 200 feet
- West loop tests every 200 feet
- Day Use Parking (next to building) one test within area.
- Overflow Parking four tests spread evenly within area
- New base areas one per area
- Sidewalks one per section between curb ramps or every 200 feet, whichever is shorter

Provide tests in conformance to Montana Public Works Standard Specifications, Sections 02230 and 02234. Tested areas not meeting specifications, including maximum density and optimum moisture, shall be re-compacted and re-tested until passing results are achieved. Provide a copy of the test results daily via fax or email to the Engineer.

c. Asphalt – Asphalt shall be core tested for density at the following interval:

### Access Road

- 4 total core tests, spaced an average of 400 ft.
  - Location and randomness to be determined by third party testing agency.

# West Loop Road

- 3 total core tests
- 1 core in the center of the parking area
- Location and randomness to be determined by third party testing agency.

# East Loop Road

- 4 total core test
- 1 core in RV parking area
- 1 core in parking area next to latrine
- Location and randomness to be determined by third party testing agency.

# Pedestrian Trail

- 3 total core samples
- Location and randomness to be determined by third party testing agency.

# Overflow Parking

- 3 total test spread randomly in the area
- Location and randomness to be determined by third party testing agency

Tests not meeting specifications shall be re-compacted and re-tested, at the cost of the contractor, until passing results are achieved. Provide a copy of the test results daily to the Owner's Representative.

The average material density shall be equal to or greater than 95 percent of the maximum dry density as determined by ASTM D2041 and no individual sample shall be less than 92 percent of maximum (Rice's) density and made from plant mix meeting the job-mix formula. Verification of maximum density as determined by ASTM D2041 from plant produced material during production is

### recommended.

- d. Cement concrete concrete shall be tested for a minimum 28 day compressive strength of 3000 psi, in accordance with ASTM C39
  - One cylinder test required per 15 cubic yards of concrete.
- e. Provide gradations from each source of import materials to be used on the project to conform to the applicable Section of Montana Public Works Standard Specification, 2010 Edition. All sources and gradations must be submitted for approval at least two weeks prior to on site use.

As part of his Quality Assurance testing, the Owner may elect to conduct periodic spot checks of materials testing and quality. The Contractor shall cooperate with the Owner's testing agent in performing these tests and provide 48 hours advance notice of the readiness of the sub-grade and base for testing. The Contractor shall be responsible to correct and retest all areas of failed tests.

- 9. <u>ACCIDENT PREVENTION</u>: Precautions shall be exercised at all times for the protection of persons (including employees) and property, and that the safety provisions of applicable laws and of applicable building construction codes shall be observed, and that machinery, equipment, and explosives shall be guarded and all hazards shall be eliminated in accordance with the safety provisions of the Manual of Accident Prevention in Construction, published by the Associated General Contractors of America, to the extent that such provisions are not in contravention of applicable law.
- 10. PERMITS AND COMPLIANCE WITH LAWS: The Contractor shall procure and pay for all other permits (including burning permits for material grubbed and cleared on site), licenses, and bonds necessary for the prosecution of his work, and/or required by Local, State, and Federal regulations and laws. The Contractor shall give all notices, pay all fees and taxes, and comply with all Federal, State, and local laws, ordinances, rules, and regulations, and building and construction codes bearing on the conduct of the work.
- 11. PROTECTION OF SITE: Excepting as otherwise provided herein, the Contractor shall protect all structures such as walks, pipelines, trees, shrubbery, and lawns during the progress of his work; shall remove from the site all debris and unused materials; and shall, upon completion of the work, restore the site as nearly as possible to its original condition, including the replacement, at the Contractor's sole expense, of any facility or landscaping which has been damaged or destroyed.
  - The Contractor shall review clearing limits with the Owner prior to removing trees or cutting vegetation. <u>Contractor shall protect and preserve all trees not approved for removal</u>. Maximum fill height on existing trees is 1'-0".
- 12. <u>SITE RESTORATION</u>: The Contractor will be required to make every effort to immediately restore the construction area once the work is completed to a level satisfactory with the Owner. All care must be taken to protect and preserve trees and vegetation within and adjacent to the construction route.

All disturbed areas shall be restored to their original condition. All construction debris, no matter how small, shall be collected and removed from the site. All wheel ruts shall be filled in and be leveled to match the adjacent grade and material. All survey markings, stakes, temporary paint marks, flagging and other devices shall be removed regardless of who installed them. All excess pavement, concrete, gravel, soil, or other construction materials not intended for permanent use shall be removed.

All final slopes shall be dressed manually to remove woody debris, accumulated trash and oversized material. Any new slope or topsoil surfaces shall be hand raked to provide a uniform appearance. The contractor shall dress all gravel, pavement and concrete edges to eliminate abrupt edges and provide a smooth transition. All construction related temporary sediment control devices shall be removed as soon as practical.

All final cleanup work shall be incidental to other work items in the contract and no separate payment shall be made.

Vegetated areas shall receive 3" of topsoil salvaged from excavations, be raked and seeded in accordance with MPWSS 02910. The fertilizer may be simultaneously applied with the seeding process. The fertilizer will be 16-16-16 applied at a rate of 150 pounds/acre. Use the following seed mix and rates:

grass species	% pure live seed	Hydraulic Seeding Rate
Western Wheatgrass	30%	
Bluebunch Wheatgrass	20%	
Hard Fescue	20%	50 lbs./acres
Slender Wheatgrass	15%	
Green Needlegrass	15%	

- 13. <u>SURVEY CONTROL</u>: The Contractor shall be responsible for all construction staking. All layout work from the baseline and benchmarks is the Contractor's responsibility at no cost to the Owner. The Contractor will be responsible to maintain and preserve the baseline and benchmarks for his work and verifications by the Project Engineer.
- 14. <u>INCLUDED WORK</u>: All work related to this project shall be included and paid for only once under the Bid Proposal whether specifically called for, or not, as intended to make a complete and operable system under this Contract. Cost of work tasks without specific pay items, including, but not limited to: widening pavement, square cutting and matching existing pavements shall be included in the related bid items. It shall be the intent of these specifications that the Contractor replace or repair back to original condition <u>all</u> areas disturbed as a result of construction (i.e. gravel and asphalt road surfaces, fences, seeding. landscaping, grading, culverts, etc.). Payment will be made for this under Item Site

Preparation/Restoration.

- 15. <u>EMERGENCY CONTACTS</u>: The Contractor shall provide the Owner with a 24 hour phone number of a party responsible and capable of immediate local response to emergency maintenance for the duration of the Contract.
- 16. <u>AS-BUILT PLAN SET</u>: The Contractor will be required to prepare a set of <u>detailed</u> asbuilt drawings to be presented to the Engineer at the completion of the project. The asbuilt drawings will be kept current, updated daily, and reviewed weekly by the Project Engineer. As-built drawings shall include, but not limited to; locations of utilities, culverts, drainage structures, etc.
- 17. PREVAILING WAGE RATES: The contractor shall utilize the Montana Statewide Davis-Bacon **Highway Construction Wage Rates** included in the Montana Prevailing Wage Rate Schedule for Heavy and Highway Construction effective at the time of bid. The most current at the time of publication of this document is <u>February 1, 2013</u> and can be found at:

http://erd.dli.mt.gov/labor-standards/state-prevailing-wage-information/current-prevailing-wage-rates.html

**END SECTION** 

# AMENDMENTS TO THE MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS

The following Amendments and the Special Provisions shall be used in conjunction with the Montana Public Works Standard Specification, Sixth Edition. The following Amendments to the Standard Specifications are made a part of this contract and supersede any conflicting provisions of the Standard Specifications. Each Amendment of added section contains all current revisions to the applicable section of the Standard Specifications and may include references which do not apply to this particular project.

#### MOBILIZATION/DEMOBILIZATION

# Added Section.

# PART 1 GENERAL

#### 1.1 DESCRIPTION

- A. This item shall consist of the prepatory work and operations necessary performed by the Contractor for the movement of personnel, equipment, supplies, and incidentals to and from the work site. The work includes those actions necessary for obtaining necessary permits required for mobilization; for the establishment of all offices and facilities necessary to work on the project; for premiums on contract bonds; for insurance for the contract; and for other work on the various items on the project site. Mobilization costs for subcontracted work shall be considered to be included.
- B. Contractor's cost for administration, bonding, insurance, and site documents shall be included in mobilization and shall not be paid as a separate item.
- C. All equipment moved to the project sites shall be in good mechanical condition and free of fuel, oil, lubrication, or other fuel leaks. The Contractor shall immediately remove any equipment potentially or actually discharging environmentally damaging fluids.
- D. All equipment moved to the project sites shall be thoroughly cleaned before it is brought to the sites to prevent the introduction of weed seeds. Equipment removed from the sites may not be returned to the sites again until it is thoroughly cleaned again.
- PART 2 PRODUCTS NOT USED
- PART 3 EXECUTION NOT USED

# PART 4 MEASUREMENT AND PAYMENT

- 4.1 MEASUREMENT
  - A. There will be no direct measurement of this item.
- 4.2 PAYMENT
  - B. Partial payments for mobilization/demobilization will be made based on the lump sum bid price as follows:

- ➤ 25% of the amount bid for mobilization/demobilization when the Contractor has moved on-site and begun construction activities.
- > 50% of the amount bid for mobilization/demobilization when 25% of the contract amount (exclusive mobilization/demobilization) has been completed.
- > 75% of the amount bid for mobilization/demobilization when 50% of the contract amount (exclusive mobilization/demobilization) has been completed.
- ➤ 100% of the amount bid for mobilization/demobilization when 75% of the contract amount (exclusive mobilization/demobilization) has been completed.

# EROSION AND SEDIMENT CONTROL

# Added Section.

# PART 1 GENERAL

# 1.1 DESCRIPTION

A. This work consists of furnishing, constructing, and maintaining permanent and temporary erosion control and sediment control measures as shown on the project drawings and/or project related construction permits.

## **PART 2 PRODUCTS**

### 2.1 GENERAL

A. Temporary and erosion control products utilized include but are not limited to backfill material; berms; brush barriers; erosion control blankets, bales, wattles, logs, rolls; erosion control culvert pipe; detention basins; fertilizer; geotextile; mulch; plastic lining; riprap; sandbags; seed; silt fence; and water.

# 2.2 EROSION CONTROL WATTLES

A. Where designated, provide a sediment retention product made from straw and coconut fiber reinforced with a 100% bio-degradable netting. Use wood stakes to secure sediment retention product in place, spacing per the manufacturer's recommendations. An acceptable product is *Sediment Stop*, manufactured by *North American Green*, or approved equal.

# 2.2 EROSION CONTROL BLANKETS

A. Where designated, provide a sediment retention product made from straw and coconut fiber reinforced with a 100% bio-degradable netting. Use wood stakes to secure sediment retention product in place, spacing per the manufacturer's recommendations. An acceptable product is *BioNet® S150BN*<sup>TM</sup>, manufactured by *North American Green*, or approved equal.

#### PART 3 EXECUTION

### **INSTALLATION**

- A. Provide permanent and temporary erosion control measures to minimize erosion and sedimentation during and after construction according to the contract erosion control plan, environmental permits, and as directed by the Project Representative. These erosion control measures shall be designed, implemented, and maintained by the Contractor in accordance with Best Management Practices (BMPs) to control erosion and sediment release from the work site.
- A. Install permanent and temporary erosion control measures according to the Storm Water Pollution Prevention Plan (SWPPP), if applicable, approved construction permits, and erosion control drawings.
- B. When erosion control measures are not functioning as intended, immediately take corrective action.

# PART 4 MEASUREMENT AND PAYMENT

# 4.1 MEASUREMENT AND PAYMENT

- A. Partial payments for erosion/sediment control will be made based on the lump sum bid price as follows:
- ➤ 25% of the amount bid for erosion/sediment control when the Contractor has moved on-site and implemented the appropriate infrastructure.
- ➤ 50% of the amount bid for erosion/sediment control when 25% of the contract amount has been completed.

- > 75% of the amount bid for erosion/sediment control when 50% of the contract amount has been completed.
- > 100% of the amount bid for erosion/sediment control when 75% of the contract amount has been completed.

### SITE CLEARING

# PART 1 GENERAL

# 1.1 RELATED DOCUMENTS

A. Drawings and special provisions of the Contract, including General and Supplementary Conditions and Division 1 Standard Specification Sections, apply to this Section.

# 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Protecting existing trees to remain.
  - 2. Removing existing shrubs, groundcovers, plants, and grass.
  - 3. Clearing and grubbing.
  - 4. Stripping and stockpiling topsoil.
  - 5. Removing above- and below-grade site improvements.

# B. Related Sections include the following:

- 1. Division 1 Section 01500 "Construction and Temporary Facilities" for temporary utilities, temporary construction and support facilities.
- 2. Division 2 Section 02200 "Earthwork" for soil materials, excavating, backfilling, and site grading.

# 1.3 DEFINITIONS

A. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches in diameter; and free of subsoil and weeds, roots, toxic materials, or other nonsoil materials.

B. Tree Protection Zone: The area surrounding a tree defined by the perimeter drip line, unless otherwise indicated, of a tree that is called out to be protected during construction.

### 1.4 MATERIAL OWNERSHIP

A. Except for stripped topsoil or other materials indicated to remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

# 1.5 SUBMITTALS

A. Record drawings, according to Division 1 Section "Project Record Documents," identifying and accurately locating capped utilities and other subsurface structural, electrical, and mechanical conditions.

### 1.6 PROJECT CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
  - 2. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
- B. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated.
- C. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.
- D. Do not commence site clearing operations until temporary erosion and sedimentation control measures are in place.

# PART 2 PRODUCTS

# 2.1 SOIL MATERIALS

A. Satisfactory Soil Materials: Requirements for satisfactory soil materials are specified below

Satisfactory Soils: [ASTM D 2487 Soil Classification Groups GW, GP, GM, SW, SP, and SM] [AASHTO M 145 Soil Classification Groups A-1, A-2-4, A-2-5, and A-3], or a combination of these groups; free of debris, waste, frozen materials, vegetation, and other deleterious matter.

1. Obtain approved borrow soil materials off-site when satisfactory soil materials are not available on-site.

# PART 3 EXECUTION

# 3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Coordinate with engineer prior to beginning construction to locate and clearly flag trees and vegetation to remain or to be relocated.

### 3.2 UTILITIES

- A. Locate, identify, and mark utilities in the field prior to beginning construction.
  - 1. If needed, arrange with utility companies to shut off indicated utilities.

# 3.3 CLEARING AND GRUBBING

- A. Remove obstructions, trees, shrubs, grass, and other vegetation to permit installation of new construction.
  - 1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
  - 2. Cut minor roots and branches of trees indicated to remain in a clean and careful manner where such roots and branches obstruct installation of new construction.
  - 3. Grind stumps and remove roots, obstructions, and debris extending to a depth of 18 inches below exposed subgrade.
  - 4. Use only hand methods for grubbing within tree protection zone.
  - 5. Chip removed tree branches and dispose of offsite.

# 3.4 TOPSOIL STRIPPING

- A. Remove sod and grass before stripping topsoil.
- B. Strip topsoil to depth of satisfactory soil in a manner to prevent intermingling with underlying subsoil or other waste materials.
  - 1. Remove subsoil and nonsoil materials from topsoil, including trash, debris, weeds, roots, and other waste materials.
- C. Stockpile topsoil materials away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust.
  - 1. Limit height of topsoil stockpiles to 72 inches.
  - 2. Do not stockpile topsoil within tree protection zones.
  - 3. Dispose of excess topsoil as specified for waste material disposal.
  - 4. Stockpile surplus topsoil to allow for respreading deeper topsoil.

# 3.5 SITE IMPROVEMENTS

- A. Strip existing gravel roadway marked for restoration on the plans. Remove existing gravel to subgrade in a manor to prevent mixing with underlying soil.
  - 1. Remove unsatisfactory materials such as trash, weeds, debris, organics and other waste materials from the crushed rock.
- B. Stockpile salvaged gravel in an area with like materials to be restored with topsoil and seeding. Shape the stockpile to drain surface water
- C. Stockpiled gravel is to be used as fill material underneath the trail section. If excess stockpile remains after trail has been completed, the stockpile can be used as an edge restoration material.

# 3.6 DISPOSAL

- A. Disposal: Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.
  - 1. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities.

# PART 4.0 PAYMENT

- A. The bid item "Site Clearing and Demolition" will be paid per lump sum.
- B. The bid item "Topsoil Stripping, Stockpile and Replacement" will be paid per lump sum.

# PREP GRAVEL ROADWAY FOR ASPHALT

# Added Section

# PART 1 GENERAL

# 1.1 DESCRIPTION

A. This work consists of preparing the gravel roadway for pavement, including grading, gaveling and compacting.

# 1.2 FIELD DENSITY TESTING

A. The gravel roadway shall be tested in accordance with AASHTO T238 (ASTM D2922) and AASHTO T239 (ASTM D3017), Nuclear Densometer Methods. Third party testing agency is to do the testing at the cost of the contractor. Quality assurance field density testing frequency is every 200 feet of roadway or as directed by the Engineer.

# PART 2 PRODUCTS

# 2.1 GENERAL

A. Crushed Base Course is conform to section 02235 of the Montana Public Works Standard Specifications.

# PART 3 EXECUTION

- A. Prepare the roadway for asphalt pavement by shaping the road as specified on the plans. Remove any potholes, bumps, uneven areas or any undesirable areas by the appropriate means.
- B. Lay 1 inch of crushed base course over the existing gravel roadway, grade consistent and smooth and compact to 95% modified dry density. The final grading is to be approved by the engineer.

# PART 4 PAYMENT

# 4.1 MEASUREMENT AND PAYMENT

A. The bid Item "Prep Gravel Roadway for Asphalt" is to be paid by the lump sum.

# **END OF SECTION 02232**

### ASPHALT CONCRETE PAVEMENT

All applicable portions of this specification section in the MPWSS shall apply with the following additions, deletions and/or modifications.

# PART 2 PRODUCTS

2.3 ASPHALT BINDER MATERIAL

Delete the entire section and replace with the following:

Use (PGAB) PG 64-22.

- 2.5 COMPOSITION OF MIXES
  - C. ASPHALT CONCRETE SURFACE COURSE

Delete the entire section and replace with the following:

The average density shall be equal to or greater than 95 percent of the maximum dry density as determined by ASTM D2041 and no individual sample shall be less than 92 percent of maximum density.

# PART 3 EXECUTION

3.28 DENSITY AND SURFACE REQUIREMENTS:

Delete the entire section and replace with the following:

A. The average mat density shall be equal to or greater than 95 percent of the maximum dry density as determined by ASTM D2041 and no individual sample shall be less than 92 percent of maximum (Rice's) density, prepared as specified in Part 2-Products in this section and made from plant mix meeting the job-mix formula. Verification of maximum density as determined by ASTM D2041 from plant produced material during production is recommended.

# SECTION 02820 WOODEN RAIL FENCE

# Added Section.

# **PART 1 GENERAL**

# 1.1 DESCRIPTION

A. This work consists of furnishing, erection, and placement of new wooden rail fence per the drawings and specifications.

# **PART 2 PRODUCTS**

# 2.1 GENERAL

- A. Wooden Posts: Posts shall be made from western larch, lodgepole pine, ponderosa pine, or douglas-fir. They shall have the bark removed, be well seasoned, sound, and straight-grained. They shall be finished round. Posts shall be <u>5</u> inch minimum diameter and <u>7</u> feet in length, or as specified in the project drawings. All posts shall be fully treated with a solution conforming to AWPA standards. Penetration shall be at least <u>1/2 inch</u>.
  - Certification of AWPA treatment shall be provided to the Project Manager.
- B. Wooden Pole Rail: Wooden pole rails shall be made from western larch, lodgepole pine, ponderosa pine, or douglas-fir. They shall have the bark removed, be well seasoned, sound, and straight-grained. They shall be finished half round. Poles shall be <u>4</u> inch minimum diameter and <u>15 (maximum)</u> feet in length. All poles shall be fully treated with a solution conforming to AWPA standards. Penetration shall be at least <u>1/2 inch</u>. Certification of AWPA treatment shall be provided to the Project Manager.
- C. Post-Pole Hardware: Fasten poles to posts with 6" *Timberlok*® screws (or approved equal), or galvanized spikes.

# **PART 3 EXECUTION**

# 3.1 FENCE INSTALLATION

- A. Post holes and excavations shall be excavated on the lines established by the Engineer to the depths and cross-sections shown on the standard drawings. Wooden posts may be driven when so prepared and any damaged posts shall be repaired or rejected. Post shall be plumb when set.
- B. All posthole filling and backfilling work shall be in six-inch layers and each layer shall be solidly tamped and compacted as it is placed.

C. Posts that are cut or trimmed for any valid reason shall be given <u>two coats of preservative</u> material approved by the Engineer.

# PART 4 MEASUREMENT AND PAYMENT

- 4.1 BASIS OF MEASUREMENT AND PAYMENT
  - A. Wooden Rail Fence installation is considered incidental to other operations of the project and will be paid with Gate Relocation.

### **SEEDING**

All applicable portions of this specification section in the MPWSS shall apply with the following additions, deletions and/or modifications.

### PART 1 GENERAL

# 1.1 DESCRIPTION

<u>Add following</u>: This work also includes conserving, placing, and finishing topsoil placement at designated areas on the project drawings or as directed by the Engineer.

# **PART 2 PRODUCTS**

# 2.1 SEED

Add the following: Utilize the following seed mix for all areas to be seeded.

Seed Name	% Pure Live Seed	Lbs. Per Acre
Western Wheatgrass	30	*
Bluebunch Wheatgrass	20	*
Hard Fescue	20	*
Slender Wheatgrass	15	*
Green Needlegrass	15	*

<sup>\*</sup> Drilled Rate = 25 lbs/acre, Broadcast and Hydroseed Rate = 50 lbs/acre

# 2.2 TOPSOIL

Add the following: Utilize all salvaged topsoil conserved from topsoil stripping operations to cover excavation and embankment slopes, fill slopes at the back of walk, fill slopes next to trail, revegatation areas and any other areas requiring topsoil prior to fertilizing, seeding, or mulching.

Utilize all salvaged topsoil conserved from top soil stripping operations to fill the planter strips to the depths as shown on the Plans.

# 2.4 FERTILIZER

Delete this Section.

# PART 4 MEASUREMENT AND PAYMENT

### 4.1 GENERAL

Delete this section and add the following:

- A. Seeding will be measured and paid by the square yard including all labor, equipment, materials and incidentals required for the completion of the work.
- B. Placing conserved topsoil will not be measured for payment and is considered incidental to other work items in this Contract.

# **SIGNING**

# Added Section.

### **PART 1 GENERAL**

### 1.1 DESCRIPTION

This work consists of furnishing and placement and/or removal and reset of signs and sign posts at designated areas on the project drawings or as directed by the Engineer. This work also consists of the mounting and complete installation of FWP supplied signing at designated areas on the project drawings or as directed by the Engineer.

### PART 2 PRODUCTS

#### 2.1 WOOD POSTS

A. Furnish posts from dry no. 1 grade Douglas fir, southern or Ponderosa pine, hemlock, spruce, or western larch conforming to AASHTO M 168. Treat the posts with waterborne preservative ACA, ACZA, or CCA according to AWPA Standard C14 except the minimum preservative retention is 0.40 pounds per cubic foot.

# 2.2 HARDWARE

A. Furnish galvanized steel or aluminum alloy material for lag screws, washers, clip angles, wood screws, shear plates, U-bolts, clamps, bolts, nuts, and other fasteners.

# **PART 3 EXECUTION**

# 3.1 GENERAL

A. Sign locations may be changed to fit field conditions as approved by the Engineer. Determine sign support lengths measured from the top of the sign to bottom of the footing. Backfill signs supports and post by tamping with hand tools and/or mechanical equipment. Install sign supports according to the project drawings or as directed by the Engineer.

# PART 4 MEASUREMENT AND PAYMENT

### 4.1 PAYMENT

A. Sign post and panel installation (FWP supplied sign panels) will be measured and paid for by the lump sum.

# PIPE GATE RELOCATION

# Added Section.

#### PART 1 GENERAL

# 1.1 DESCRIPTION

A. This work consists of the relocation of the existing pipe gate and/or the fabrication and installation of two new pipe gates, if the contractor chooses to fabricate new posts, as designated on the Plans or as directed by the Engineer.

# 1.2 SHOP DRAWINGS

A. Provide the project manager with a legible set of shop drawings for review. The shop drawings are the have all dimensions for the replacement pipe gates, if the contractor elects to manufacture new pipe posts.

### PART 2 PRODUCTS

# 2.1 MATERIALS

- A. Existing pipe gate located on site.
- B. Pipe for posts: 8" Standard steel well casing.
- C. Hardware: Bolts, threaded rod and nuts to be Grade A hardness
- D. Concrete: 3000 psi 28 day compressive strength

# 2.2 FINISHES

This section only applies if the contractor chooses to manufacture new gate posts. If the contractor chooses to relocate existing pipe gate posts, this section may be omitted.

- A. The prepared metals surfaces must be free of rust, grease, dirt and other contaminates. Treat cleaned metal with phosphoric acid or as recommended by finish manufacturer.
- B. Apply primer as recommended by manufacturer

- C. Apply two coats of finish paint. Provide color samples to Owner for selection of finished paint color.
- D. After installation of gate posts touch up flaws in the paint with the finish paint.

## PART 3 EXECUTION

# 3.1 RELOCATION

- A. Dismantle the existing pipe gate and salvage all parts.
- B. Move the existing pipe stop bollards 15 feet to the south.
- C. Install new steel pipe gate posts, or relocate existing, 15 feet south of previous location and as specified on the Plans. New posts are to be set in 3000 psi concrete and centered in the post hole, the post hole shall be 6 inch larger radius than the pipe posts.
- D. Set gate centered over road and at height above the road surface that allows for gate clearance of the finished roadway and allows proper gate operation.
- E. Set gates so that there is a minimum of 1 ½" of exposed hinge pin threads on either side of adjustment nuts to allow for future adjustment. Grease entire length of threads before installing.
- F. Install items plumb and level, accurately fitted, free from distortion or defects, and so gates operate smoothly, if items are not set plumb and level the Engineer may elect to have the contractor reset the components to level and plumb at no cost to the Owner.
- F. Obtain Architect/Engineer approval prior to site cutting or making adjustments not scheduled.
- G. Test operation of gate. Adjust all components so that they operate freely in the manner they were designed to operate. Touch up any remaining flaws in the paint. Clean up all debris. Rake and smooth disturbed areas for seeding.
- H. Topsoil disturbed areas with 3" topsoil, rake smooth and remove clumps, seed with mix as outlined in section 02910.

# PART 4 MEASUREMENT AND PAYMENT

#### 4.1 GENERAL

В.	Pipe gate relocation will be measured and paid for by the Lump Sum (LPSM) including all labor, equipment, materials, and incidentals required for the completion of the work and to install a new section of fence to relocated gate.
	END OF SECTION 05100